REMARKS

Claims 23-24 and 27-48 are pending in this application.

Claims 23-24, 27, 38-39, 41-42 and 46 have been allowed.

Claims 28-29, 32, 40, 43-45 and 47-48 have been rejected.

Claims 30-31 and 33-37 have been objected to.

Reconsideration and full allowance of Claims 23-24 and 27-48 are respectfully requested.

I. AMENDMENT TO SPECIFICATION

A paragraph on Pages 1-2 of the specification has been amended to correct a typographical error. It was incorrectly stated that the two different sized base-emitter diodes are the same size. The fact that they are "different sized" means that they are not the same size. No new matter has been added as a result of this amendment.

II. ALLOWABLE SUBJECT MATTER

The Applicants thank the Examiner for the indication that Claims 23-24, 27, 38-39, 41-42 and 46 are allowed. The Applicants also thank the Examiner for the indication that Claims 30-31 and 33-37 would be allowable if amended to overcome the objections of being dependent upon a rejected base claim. (March 26, 2007 Office Action, Page 5, Lines 13-15). Because the Applicants believe that the rejected base claims are allowable, the Applicants have not amended Claims 30-31 and 33-37 at this time.

III. REJECTIONS UNDER 35 U.S.C. § 102

The March 26, 2007 Office Action rejected Claims 44 and 48 as being anticipated by U. S., Patent No. 6,529,066 to Guenot et al. ("*Guenot*"). The March 26, 2007 Office Action also rejected Claims 44 and 48 as being anticipated by U. S., Patent No. 6,121,824 to Opris et al. ("*Opris*"). The Applicants respectfully traverse these rejections for the reasons set forth below.

It is axiomatic that a prior art reference anticipates the claimed invention under 35 U.S.C. § 102 only if every element of a claimed invention is identically shown in that single reference, arranged as they are in the claims. MPEP § 2131. *See*, *In re King*, 231 USPQ 126, 138 (Fed. Cir. 1986) (citing with approval, *Lindemann Maschinenfabrik v. American Hoist and Derrick*, 221 USPQ 481, 485 (Fed. Cir. 1984)); *In re Bond*, 910 F.2d 831, 832, 15 USPQ2d 1566, 1567 (Fed. Cir. 1990). Anticipation is only shown where each and every limitation of the claimed invention is found in a single prior art reference. MPEP § 2131. *In re Donohue*, 766 F.2d 531, 534, 226 USPQ 619, 621 (Fed. Cir. 1985).

A. The *Guenot* Reference

With respect to Claims 44 and 48, a determination of anticipation in accordance with Section 102 requires that each feature claimed therein be described in sufficient detail in *Guenot* to enable one of ordinary skill in the art to make and practice the claimed invention.

The Applicants respectfully disagree with the Examiner's assertions regarding the subject matter disclosed in the *Guenot* reference. The Applicants respectfully submit that the *Guenot* reference does not show each and every limitation of the Applicants' invention arranged as they are in the claims. The Applicants direct the Examiner's attention to Claim 1, which contains unique and novel limitations:

44. (Previously Presented) A band-gap reference circuit comprising:

a current source;

a circuit branch coupled to said current source for receiving current generated by said current source, said circuit branch including a resistor having a positive temperature coefficient connected in series with a base-emitter diode having a negative temperature coefficient, wherein said current develops a combined voltage across said series connection of said resistor and said base-emitter diode;

a further base-emitter diode;

an adjustment circuit for adjusting a band-gap reference voltage based on said combined voltage and a base-emitter voltage of said further base-emitter diode; and

a correction circuit coupled to said adjustment circuit and cooperable therewith for at least partially offsetting a drop-off in said band-gap reference voltage caused by said further base-emitter diode.

The Examiner stated that the *Guenot* reference discloses "a correction circuit (32) coupled to the adjustment circuit and cooperable with the adjustment circuit for at least 'partially' offsetting a drop-off in the band-gap reference voltage caused by the second base-emitter diode . . ." (March 26, 2007 Office Action, Page 2, Line 26 to Page 3, Line 2).

The Applicants respectfully submit that the correction circuit (operational amplifier 32) in the *Guenot* reference is not located in a circuit that comprises base-emitter diodes. The correction circuit (operational amplifier 32) is located in the device shown in Figure 3 of the *Guenot* reference. In the device shown in Figure 3 the base-emitter diodes 8A and 8B that were in the prior art device shown in Figure 1 have been replaced with transistors 8A and 8B that are not diode connected. "With respect to the parasitic vertical PNP transistors 8A and 8B, rather than being diode connected as in FIG. 1, the common base electrodes are connected in common to a bias voltage, sometimes referred to as a boost voltage, Vboost." (*Guenot*, Column 4, Lines 27-31).

The *Guenot* reference does not show the elements of the Applicants' invention as claimed in Claim 44 or in Claim 48. This is because the *Guenot* reference does not show a correction circuit in a band gap reference circuit that comprises base-emitter diodes. The *Guenot* reference does not identically show every element of the Applicants' claimed invention in a single reference, arranged as they are in the claims. The Applicants respectfully submit that the *Guenot* reference does not anticipate the Applicants' invention. The Applicants respectfully request that the anticipation rejections of Claim 44 and Claim 48 be withdrawn.

B. The *Opris* Reference

With respect to Claims 44 and 48, a determination of anticipation in accordance with Section 102 requires that each feature claimed therein be described in sufficient detail in *Opris* to enable one of ordinary skill in the art to make and practice the claimed invention.

The Applicants respectfully disagree with the Examiner's assertions regarding the subject matter disclosed in the *Opris* reference. The Applicants respectfully submit that the *Opris* reference does not show each and every limitation of the Applicants' invention arranged as they are in the claims.

The Examiner stated that "Opris discloses a band-gap reference circuit, comprising: a current source (I) for generating a current; a circuit branch comprising a resistor connected in series with a first base emitter diode (R1, QL), wherein the current from the current source (I) develops a combined voltage across the resistor and the first base-emitter diode; a second base-emitter diode (Q1); an adjustment circuit (A1) for adjusting a band-gap reference voltage based on the combined voltage and a base-emitter voltage of the second base-emitter diode; and a correction circuit coupled to the adjustment circuit and cooperable with the adjustment circuit for

at least 'partially' offsetting a drop-off in the band-gap reference voltage caused by the second base-emitter diode (fig. 2)." (March 26, 2007 Office Action, Page 3, Lines 13-21).

The Applicants respectfully submit that the correction circuit shown in Figure 2 of the *Opris* reference is not located in a circuit that comprises base-emitter diodes. The correction circuit is located in the device shown in Figure 2 of the *Opris* reference. In the device shown in Figure 2 the transistors Q_I and Q_L are not diode connected. The base of transistor Q_I is not connected to the emitter of transistor Q_I. The base of transistor Q_I is connected to Node A. The base of transistor Q_L is not connected to the emitter of transistor Q_L. The base of transistor Q_L is connected to Node D.

The *Opris* reference does not show the elements of the Applicants' invention as claimed in Claim 44 or in Claim 48. This is because the *Opris* reference does not show a correction circuit in a band gap reference circuit that comprises base-emitter diodes. The *Opris* reference does not identically show every element of the Applicants' claimed invention in a single reference, arranged as they are in the claims. The Applicants respectfully submit that the *Opris* reference does not anticipate the Applicants' invention. The Applicants respectfully request that the anticipation rejections of Claim 44 and Claim 48 be withdrawn.

IV. REJECTIONS UNDER 35 U.S.C. § 103

The March 26, 2007 Office Action rejected Claims 28, 29, 32, 40 43 and 47 under 35 U.S.C. § 103(a) as being unpatentable over U. S., Patent No. 6,529,066 to Guenot et al. ("*Guenot*") in view of U.S. Patent No. 6,445,167 to Nicolas Marty ("*Marty*"). The March 26, 2007 Office Action also rejected Claim 45 under 35 U.S.C. § 103(a) as being unpatentable over *Guenot* in view of U.S. Patent No. 6,362,605 to Michael May ("*May*"). The Applicants respectfully traverse these rejections for the reasons set forth below.

During *ex parte* examinations of patent applications, the Patent Office bears the burden of establishing a *prima facie* case of obviousness. MPEP § 2142; *In re Fritch*, 972 F.2d 1260, 1262, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992). The initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention is always upon the Patent Office. MPEP § 2142; *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); *In re Piasecki*, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984). Only when a *prima facie* case of obviousness is established does the burden shift to the applicant to produce evidence of non-obviousness. MPEP § 2142; *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); *In re Rijckaert*, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993). If the Patent Office does not produce a *prima facie* case of unpatentability, then without more the applicant is entitled to grant of a patent. *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); *In re Grabiak*, 769 F.2d 729, 733, 226 USPQ 870, 873 (Fed. Cir. 1985).

A *prima facie* case of obviousness is established when the teachings of the prior art itself suggest the claimed subject matter to a person of ordinary skill in the art. *In re Bell*, 991 F.2d 781, 783, 26 USPQ2d 1529, 1531 (Fed. Cir. 1993). To establish a *prima facie* case of

obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed invention and the reasonable expectation of success must both be found in the prior art, and not be based on an applicant's disclosure. MPEP § 2142.

The Applicants repeat and incorporate by reference the arguments and comments previously made with respect to the *Guenot* reference and with respect to the *Opris* reference in connection with the anticipation rejections under 35 U.S.C. § 102.

A. The *Guenot* Reference and the *Marty* Reference

The March 26, 2007 Office Action rejected Claims 28, 29, 32, 40, 43 and 47 as being unpatentable over the *Guenot* reference in view of the *Marty* reference. Independent Claims 28 and 40 recite that a "start circuit" has "a first output coupled to [an] output of [an] adjustment circuit," where the "adjustment circuit" has an output coupled to a "current source" and inputs coupled to a "circuit branch" and a "further base-emitter diode."

The March 26, 2007 Office Action states that "Guenot et al. discloses a bandgap reference circuit having a current source (6A, 6B or 6C); a circuit branch(s) (6A & 6B) with positive and negative temperature coefficients as claimed; further base emitter diode (8A) adjustment circuit (32 & Vboost) for partially offsetting the voltage drop from (8A)." (March 26, 2007 Office Action, Page 4, Lines 11-14). The Applicants respectfully traverse this characterization of the teaching of the *Guenot* reference for the reasons previously set forth.

The March 26, 2007 Office Action acknowledges that *Guenot* fails to disclose a start circuit having an output coupled to the output of the adjustment circuit. (March 26, 2007 Office Action, Page 4, Line 15). The March 26, 2007 Office Action then asserts that *Marty* discloses a start-up circuit 20 and that it would be obvious to modify *Guenot* with *Marty*. (March 26, 2007 Office Action, Page 4, Lines 16-20). The Applicants respectfully traverse this assertion.

The *Marty* reference recites that a regulator 10 includes an amplifier 5 and a start-up circuit 20. (*Marty*, Column 4, Lines 15-20 and Lines 45-47). The March 26, 2007 Office Action does not explain how the start-up circuit 20 represents a "start circuit" having "an output coupled to [an] output of [an] adjustment circuit," where the "adjustment circuit" has an output coupled to a "current source" and inputs coupled to a "circuit branch" and a "further base-emitter diode." More specifically, the March 26, 2007 Office Action does not explain how the amplifier 5 of *Marty* anticipates an "adjustment circuit" that would be used in the circuit of *Guenot* or why the start-up circuit 20 of *Marty* would be coupled to an output of the alleged "adjustment circuit" of *Guenot*. Without that, the March 26, 2007 Office Action cannot simply assume that it would be obvious to modify *Guenot* by including the start-up circuit 20 of *Marty*.

Further, the supposed motivation "to ensure the proper startup" is very general and does not specifically suggest combining the teachings of the *May* reference with the teachings of the *Guenot* reference. There must be some suggestion or motivation, either in the references themselves, or in the knowledge generally available to one of ordinary skill in the art, to modify a reference or to combine reference teachings. The desire to obtain a "proper startup" is too general and vague to provide the requisite motivation to modify a reference or to combine reference teachings. The *May* reference does not discuss or even suggest how to properly

start up the circuitry of the Applicants' invention. For this reason alone there is no suggestion or motivation to combine the teachings of the *Marty* reference with the teachings of the *Guenot* reference.

Evidence of a motivation to combine prior art references must be clear and particular if the trap of "hindsight" is to be avoided. *In re Dembiczak*, 175 F.3d 994, 50 USPQ2d 1614 (Fed.Cir. 1999) (Evidence of a suggestion, teaching or motivation to combine prior art references must be "clear and particular." "Broad conclusory statements regarding the teaching of multiple references, standing alone, are not 'evidence.'"). *In re Roufett*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457 (Fed.Cir. 1998) ("[R]ejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. Such an approach would be 'an illogical and inappropriate process by which to determine patentability.'")

The Applicants respectfully submit that the alleged motivation to combine references presented by the Examiner does not meet the legal requirement to establish a finding of *prima facie* obviousness. The Applicants respectfully submit that the alleged motivation to combine references is not clear and particular. The Examiner stated that "Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Guenot et al. to include a startup circuit to ensure the proper startup of the circuit as taught by Marty." (March 26, 2007 Office Action, Page 4, Lines 18-20). The Applicants respectfully traverse this assertion of the Examiner. The fact that two references are concerned with the same general technical area does not without more provide a "clear and particular" motivation to

combine the references. The Applicants respectfully submit that the alleged motivation to combine references has been assumed by "hindsight" in light of the existence of the Applicants' invention.

The Applicants respectfully submit that even if the *Marty* reference could somehow be properly combined with the *Guenot* reference (which the Applicants do not admit), the combination would not teach, suggest, or even hint at the Applicants' invention as set forth in Claims 28, 29, 32, 40, 43 and 47. MPEP § 2142 indicates that a prior art reference (or references when two or more references are combined) must teach or suggest all the claim limitations of the invention. The teaching or suggestion to make the claimed invention and the reasonable expectation of success must both be found in the prior art, and not be based on an applicant's disclosure. In the present case, for the reasons previously set forth, the *Marty* reference and the *Guenot* reference in combination would not teach or suggest all the claim limitations of the Applicants' invention. That is, the *Marty* reference does not and cannot supply the deficiencies of the *Guenot* reference that have been previously identified.

The March 26, 2007 Office Action does not establish that a person skilled in the art would modify *Guenot* with *Marty* to include a "start circuit" coupled to an "adjustment circuit" as recited in Claim 28 (and its dependent claims). The March 26, 2007 Office Action does not establish that a person skilled in the art would modify *Guenot* with *Marty* to reach the claimed invention recited in Claim 40 (and its dependent claims). The March 26, 2007 Office Action does not establish that a person skilled in the art would modify *Guenot* with *Marty* to reach the claimed invention recited in Claim 47.

For the reasons set forth above, the Applicants respectfully submit that the obviousness rejections of Claims 28, 29, 32, 40, 43 and 47 have been overcome. The Applicants respectfully request that the obviousness rejections of Claims 28, 29, 32, 40, 43 and 47 be withdrawn and that these claims be passed to allowance.

B. The *Guenot* Reference and the *May* Reference

The March 26, 2007 Office Action rejected Claim 45 as being unpatentable over the *Guenot* reference in view of the *May* reference. The Applicants respectfully traverse the rejection of Claim 45. The Applicants repeat and incorporate by reference the arguments and comments previously made with respect to the *Guenot* reference in connection with the anticipation rejections under 35 U.S.C. § 102 and the obviousness rejections under 35 U.S.C. § 103.

The March 26, 2007 Office Action states that "Guenot et al. discloses a bandgap reference circuit having a current source (6A, 6B or 6C); a circuit branch(s) (6A & 6B) with positive and negative temperature coefficients as claimed; further base emitter diode (8A) adjustment circuit (32 & Vboost) for partially offsetting the voltage drop from (8A)." (March 26, 2007 Office Action, Page 4, Line 23 to Page 5, Line 2). The Applicants respectfully traverse this characterization of the teaching of the *Guenot* reference for the reasons previously set forth.

Claim 45 recites a "correction circuit" coupled to an "adjustment circuit" and cooperable therewith for "at least partially offsetting a drop-off in [a] band-gap reference voltage caused by [a] further base-emitter diode."

The March 26, 2007 Office Action suggests that it would have been obvious to combine the teaching of the *May* reference with the teaching of the *Guenot* reference and that the combination would render obvious the Applicants' invention as claimed in Claim 45. The Applicants respectfully submit that the *May* reference does not remedy the deficiencies of the *Guenot* reference.

The *May* reference discloses a method and apparatus for efficiently powering an integrated circuit. The May method comprises the steps of (1) generating a representation of a battery voltage, (2) producing a regulated bias current, (3) providing the regulated bias current to an external crystal, (4) generating an oscillation in the external crystal in response to the bias current, (5) generating a clock signal from the oscillation, (6) providing the clock signal to a direct current (DC) to direct current (DC) converts the battery voltage into a regulated output voltage, and (7) thereby reducing power consumption to produce a crystal oscillator bias current. (*May*, Column 2, Lines 33-49).

The March 26, 2007 Office Action does not explain how the *May* apparatus and method could be used in the *Guenot* apparatus. In particular, the *May* reference lacks any mention of a correction circuit that is used for "at least partially offsetting" a "drop-off" in a reference voltage that is "caused by [a] further base-emitter diode."

There must be some suggestion or motivation, either in the references themselves, or in the knowledge generally available to one of ordinary skill in the art, to modify a reference or to combine reference teachings. The March 26, 2007 Office Action does not identify any suggestion or motivation to combine the *May* reference and the *Guenot* reference. Therefore, a prima facie showing of obviousness has not been established for Claim 45.

The Applicants respectfully submit that even if the *May* reference could somehow be properly combined with the *Guenot* reference (which the Applicants do not admit), the combination would not teach, suggest, or even hint at the Applicants' invention as set forth in Claim 45. MPEP § 2142 indicates that a prior art reference (or references when two or more references are combined) must teach or suggest all the claim limitations of the invention. The teaching or suggestion to make the claimed invention and the reasonable expectation of success must both be found in the prior art, and not be based on an applicant's disclosure. In the present case, for the reasons previously set forth, the *May* reference and the *Guenot* reference in combination would not teach or suggest all the claim limitations of the Applicants' invention. That is, the *May* reference does not and cannot supply the deficiencies of the *Guenot* reference that have been previously identified.

For the reasons set forth above, the Applicants respectfully submit that the obviousness rejection of Claim 45 has been overcome. The Applicants respectfully request that the obviousness rejection of Claim 45 be withdrawn and that Claim 45 be passed to allowance.

V. CONCLUSION

The Applicants respectfully assert that all pending claims in this application are in condition for allowance and respectfully request full allowance of the claims.

The Applicants' attorney has made the amendments and arguments set forth above in order to place this Application in condition for allowance. In the alternative, the Applicants' attorney has made the amendments and arguments to properly frame the issues for appeal. In this Amendment, the Applicants make no admission concerning any now moot rejection or objection, and affirmatively deny any position, statement or averment of the Examiner that was not specifically addressed herein.

SUMMARY

If any outstanding issues remain, or if the Examiner has any further suggestions for expediting allowance of this application, the Applicants respectfully invite the Examiner to contact the undersigned attorney at the telephone number indicated below or at *wmunck@munckbutrus.com.*

The Commissioner is hereby authorized to charge any fees connected with this communication (including any extension of time fees) or credit any overpayment to the Munck Butrus Deposit Account No. 50-0208.

Respectfully submitted,

MUNCK BUTRUS, P.C.

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William A. Munck
Registration No. 39,308

P.O. Drawer 800889
Dallas, Texas 75380
(972) 628-3600 (main number)
(972) 628-3616 (fax)
E-mail: *wmunck@munckbutrus.com*